

Logistics and Supply Chain Management

By: Ankita Aggarwal

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LOGISTICS AND SUPPLY CHAIN MANAGEMENT

Logistics and SCM: An Overview

Logistics and SCM: An Introduction



INTRODUCTION

Every organization has a number of objects to be moved. Organizations together assemble raw materials collected from various suppliers and present finished goods to the customers. This job is carried out by the logistics department. So, we know that logistics is the movement which moves both tangible materials (e.g. raw materials) and intangible material (e.g. information) processing all the way to the customers. Now let's learn about supply chain. "A supply chain involves a series of actions connecting various organizations where the materials move from original suppliers to final customers. There may be special supply chains for every specific product. The series of activities is named differently as per the requirements. If the stress is on operations then it is called process; if the stress is on marketing then it is known as logistics; if the stress is on value-addition then it is known as value-chain; if the stress is on meeting customer demand then it is known as demand chain; if the stress is on the movement of material then it is generally called as supply chain. In this chapter, we will discuss the different aspects of a supply chain.

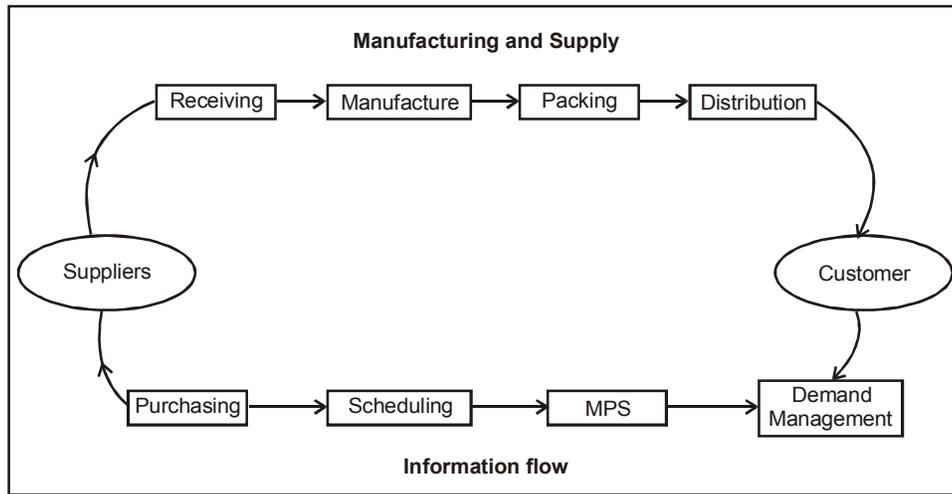
CHAPTER AT A GLANCE

LOGISTICS AND SCM

A supply chain as a cluster of organizations, linked by a chain of trading associations. This covers all the logistics and manufacturing activities from raw materials to the final consumer. Every organization in the chain acquires and then converts raw materials into final products, and send them out to the customers.

The supply chain is known as the management–within the chain of all linked companies–of the company's diverse logistical phases like, raw materials acquisition, storage, manufacture, allocation and customer service. In supply chain system, all the organizations involved in the production of certain goods or services. It must be considered along with all the logistical stages within these organizations. Hence, we can say that supply chain is a network connecting and interlinking different supply chains of all the companies. The following diagram shows the supply chain.

Fig. 1.1: Traditional Supply Chain



The supply chain activity comprises of intricate objectives, as it engages different decision-makers from different organizations, who sometimes are not directly linked and are located in different geographical locations; inspite of that, their decisions are interdependent upon each other. Therefore, an efficient information system is required that can link together the different members of the chain for effective open communication.

Since decades, we have seen movement from physical distribution to logistics management and then to supply chain management. Supply chain management is the ideal name for the realization of “integrated logistics”, with it posing as a facilitator; enabling an integrated process view about the logistics and all associated processes related to business. Preferably the supply chain should be a “seamless” chain as displayed in the figure below:

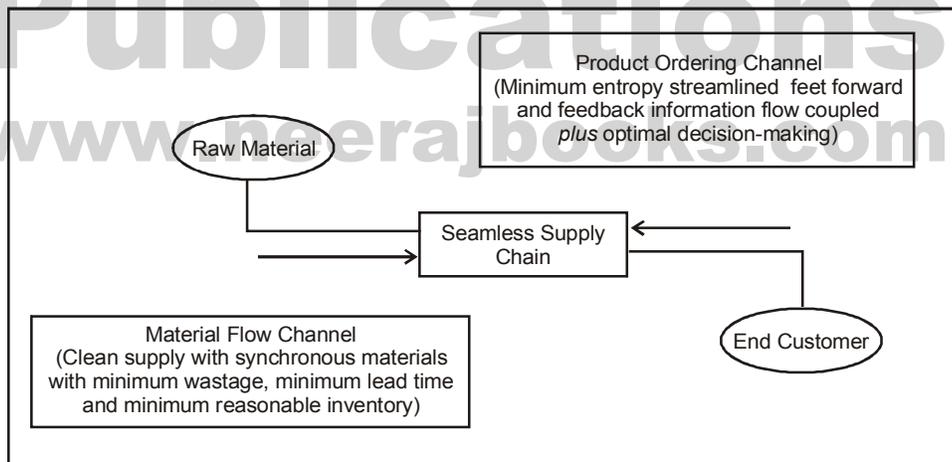


Fig. 1.2 Seamless Supply Chain

Source: Sahay B.S., 1998

The significance of logistics can be understood from the fact that the GDP for developing countries for logistics and supply chain management costs are in range of 10 to 15 whereas for developed countries it is around 18 to 20 per cent, Integrated logistics involves two interconnected efforts:

Logistics Operation: Logistic operation is the union of physical distribution management, materials management and internal inventory transfer.

Logistic Coordination: Logistic coordination refers to forecasting, order processing, operational planning and or MRP. This amalgamation is the outcome of valuable information flow.

Definitions

Forrester (1961) mentioned that the five flows of any economic activity—money, orders, materials, personnel and equipment are interconnected by an information set up, which presents the “system,” which is presently called supply chain due to its own nature.

According to **Christopher (1992)** supply chain is network of organizations that are involved, through upstream and downstream linkages, in the various processes and activities that produce value in the form of products and services in the hands of the ultimate consumer. Managing and maintaining these linkages and delivering the product-service to the customer in a cost effective way is SCM.

Supply chain management includes materials/supply management from the supply of basic raw materials to final product and every possible recycling and re-use. SCM concentrates on how firms use their suppliers’ processes, technology and capability to boost competition. This philosophy integrate suppliers,

manufacturers, warehouses and stores with a common goal of optimization of resources so that the product/service is produced and distributed at the right quantities, to the right location and at the right time to eliminate any wastage.

The crux of these definitions is that SCM integrates performance approaches over multiple firms or processes. Supply chain management has integrated suppliers to the end consumers while alarming the flow of materials to and from the organization and stressing on the need for teamwork to optimize the whole management system. This means that SCM is the process of designing, planning and implementing any change in the formation and performance of the ‘flow’ so as to generate increased value, lower costs, superior customer service and capitulate a competitive advantage. The substance of SCM varies greatly with the type of business. Figure given below shows the different components of logistics management:

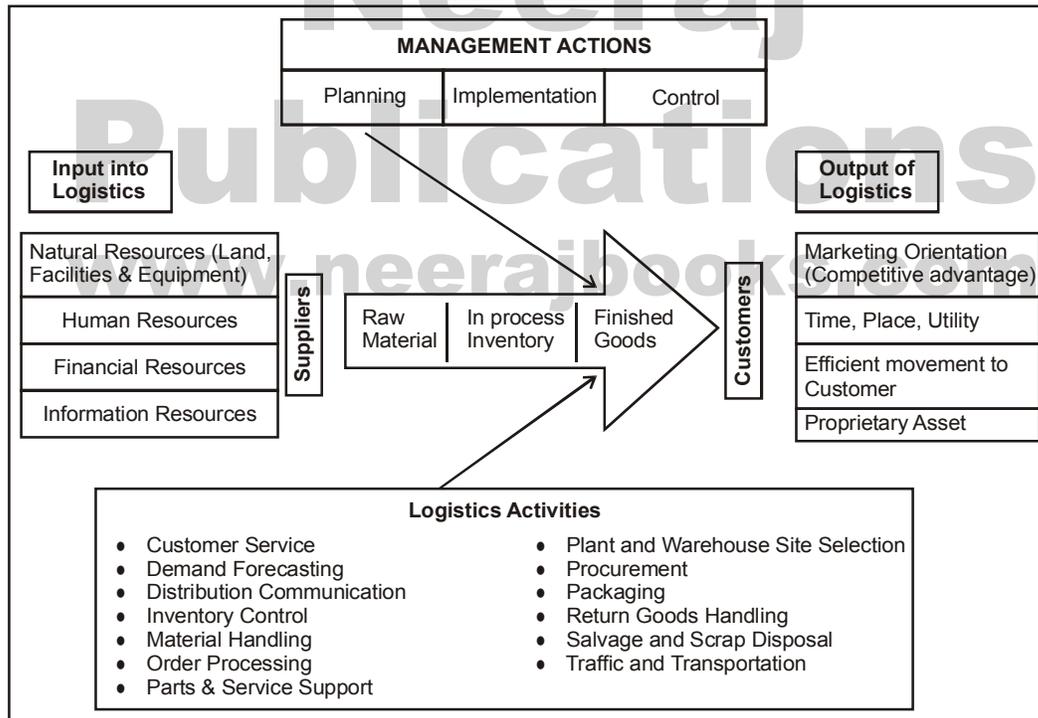


Fig. 1.3. Components of Logistic Management
(Source: Douglas M. Lambert, 1998, Pg-5)

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A representative list of logistic element for a firm is given in Table 1.1.

Table 1.1: Logistic Element

Facility Location	Determining location, number and size of facilities needed, Allocation demand to facilities
Transportation	Mode and service selection Carrier routing Vehicle scheduling
Inventories	Finished goods stocking policies, Record-keeping, Supply scheduling, Short-term sales forecasting
Customer Service	Cooperate with marketing in: determining customer needs and wants for service determining customer response to service
Order Processing and Information Flows	Sales order procedure Information collection, storage and manipulation
Warehousing and Material Handling	Data analysis Space determination
Protection Packaging Product Scheduling	Stock layout Material handling equipment selection Stock storage and retrieval Equipment replacement policies Design for: handling, storage, protection Cooperate with production in: specifying aggregate production quantities sequencing and timing of production

DEVELOPMENT OF LOGISTICS

Logistics is a centuries old activity, which can be traced to the earliest form of organized trade. However, it caught attention in the early 1990s. Logistics came into light after the Gulf war in 1990-91 during the efficient and successful distribution of store supplies. Logistics was noted more as a major cost driver when interest rates were rising and power cost was increasing. Globalization of industry made logistics cost an even more critical issue for many organizations. It has affected logistics in two major ways.

First, the growth of top-notch competitors worldwide has forced organizations to find new ways to distinguish their organizations and products/services.

Second, as organizations increasingly buy and sell globally, the supply chain between the organizations becomes longer, more expensive and more intricate. Outstanding logistics management is required to fully control global opportunities. Information technology added the boom to the logistics giving the organization the ability to finely monitor transaction based activities like ordering, movement and storage of goods and materials. IT also enabled the ability to manage flows and to optimize inventory levels and movement with

the help of computerized quantitative models. Advanced IT improved prioritizing customer service, growing reformation of the system approach and total cost concept.

The system approach is a serious thought in logistics as logistics is in itself a system or a network of connected activities aiming to manage the flow of material and personnel within the logistic channel. The system approach affirms that all processes or activities influence and are influenced by other elements and activities with which they interact. In real meaning, the result of a chain of activities is greater than its individual parts.

THE ROLE OF LOGISTICS IN THE ECONOMY

Logistics plays an important role in the economy in two major ways. Firstly, logistics accounts for the major expenditures for business i.e. around 15-20% of GDP, hence, making an important contribution to the economy as a whole.

Secondly, logistics facilitate the movement and flow of many economic transactions; it helps in the sale of almost all goods and services. If goods do not reach their destination at the right time and in the proper